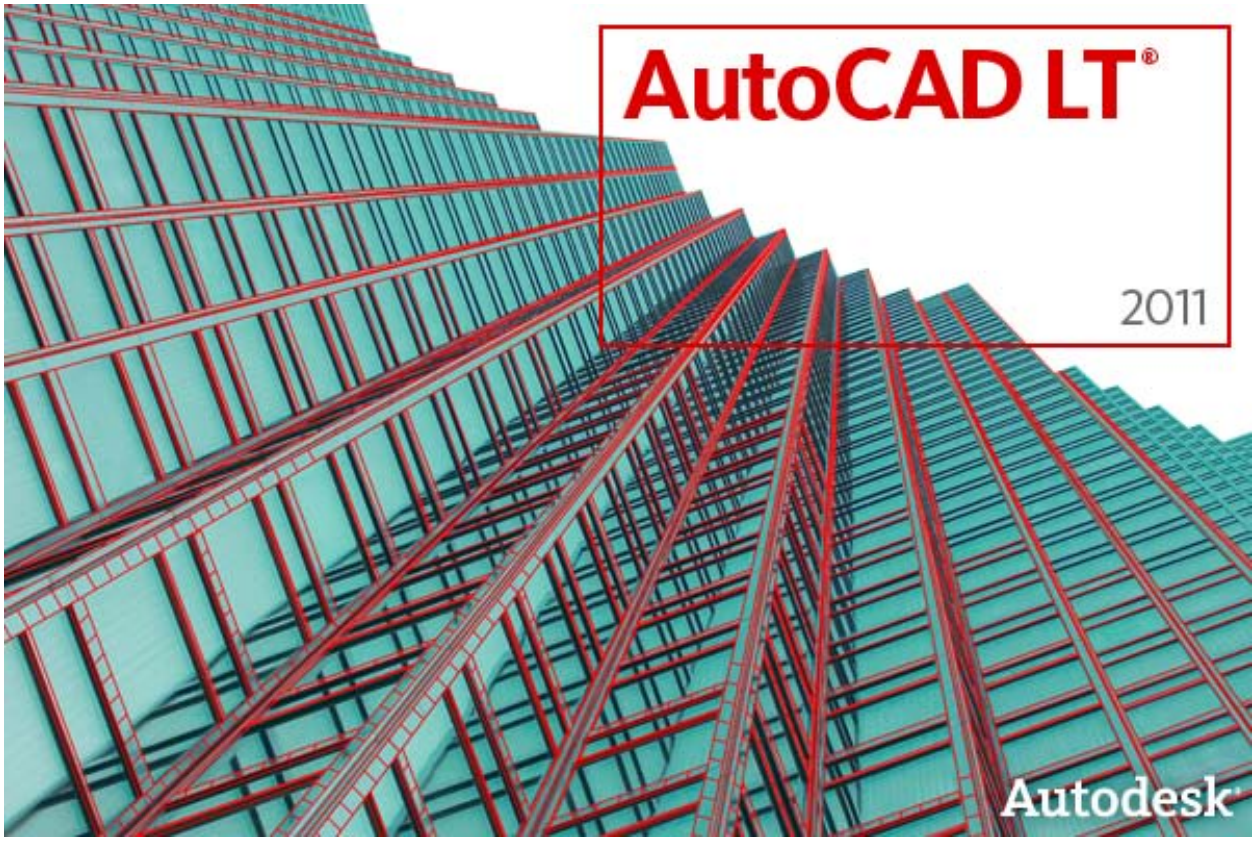
AutoCAD LT 2011 Preview Guide



AutoCAD LT® software is a leader in 2D drafting productivity and data reliability. Now, new features in AutoCAD LT 2011 bring you more options for precise control of your 2D drawings. Improve the appearance of your drawings with transparent objects and layers, and manage object visibility by hiding or isolating objects, independent of layer. Create and edit hatches faster with easier access to hatch tools. New multifunctional grips for polylines provide valuable flexibility and control during editing. The professional choice in 2D drafting software now offers even more ways to take control of your drawing productivity.

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User Interface

AutoCAD LT 2011 offers a variety of user interface enhancements that enable you to design with greater ease and efficiency.

Drawing Window

The drawing window has been updated in AutoCAD LT 2011 to display a dark gray background in modelspace. You can easily modify the drawing window color from the Display tab of the Options dialog box.

The traditional dot grid has been replaced with horizontal and vertical gridlines to more closely represent engineering graph paper. When the grid is enabled, red and green lines extend from the UCS icon to represent the X and Y axes of the origin.

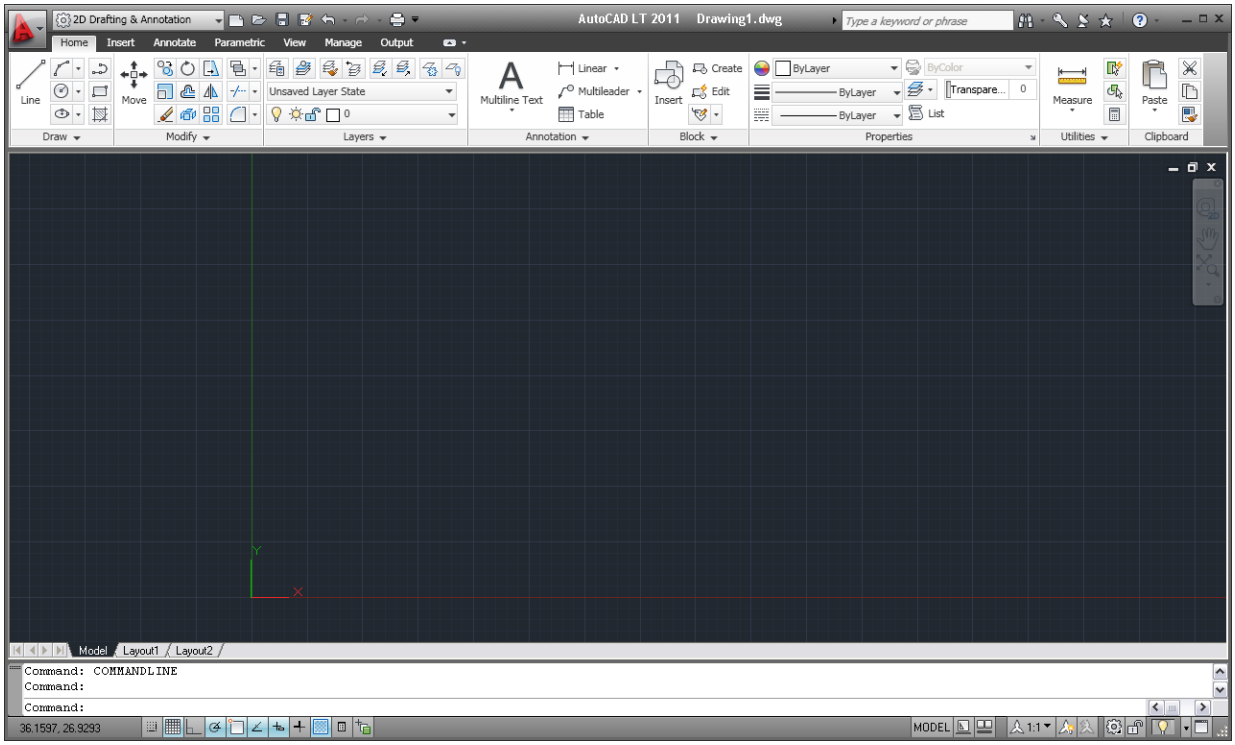

Figure 1. AutoCAD LT 2011 drawing window

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The Ribbon

A new pull-down menu has been added to the ribbon cycle button at the end of the list of tabs. You can minimize the ribbon to panel buttons, tabs, or panel titles.

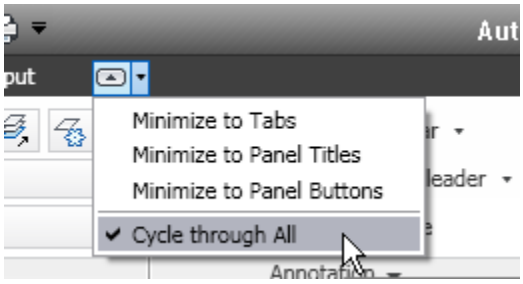

Figure 2. Ribbon cycle options

When you minimize the ribbon to panel buttons, large icons appear for each panel. Hovering over the button causes the panel to expand, similar to the behavior you see when the ribbon is minimized to panel titles.

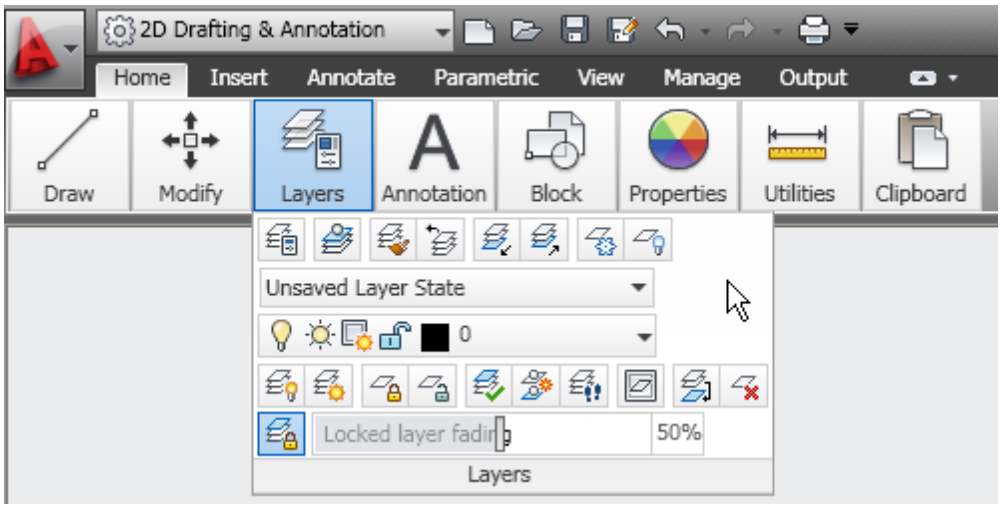

Figure 3. Ribbon panel buttons

The Insert ribbon tab includes a new Content panel provides easy access to Design Center and Autodesk Seek.

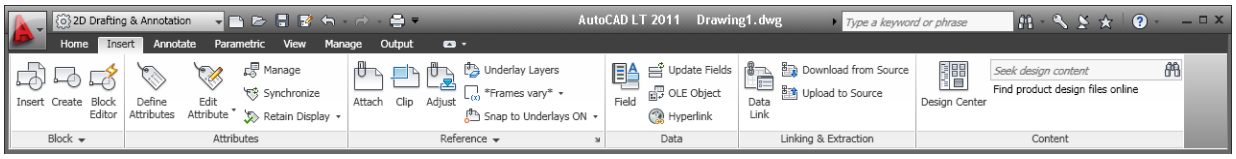

Figure 4. Insert ribbon tab

On the View ribbon tab, the Windows panel includes new User Interface and Toolbar controls that enable you to easily toggle the display of the Navigation Bar, the Text Window, and toolbars. The status bar controls, although no longer on the Windows panel, are still easily accessible from the status bar.

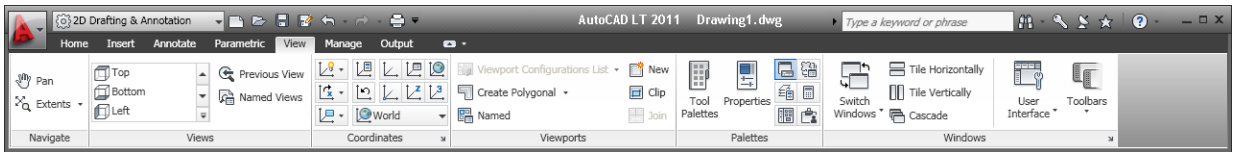

Figure 5. View ribbon tab

Customizable ribbon functionality in the Customize User Interface dialog box is enhanced to include new Fold panels. As you change the size of your AutoCAD LT window or add and remove panels from a tab, Fold panels resize horizontally to fill the available space. Fold panel properties enable you to specify default, maximum, and minimum button sizes.

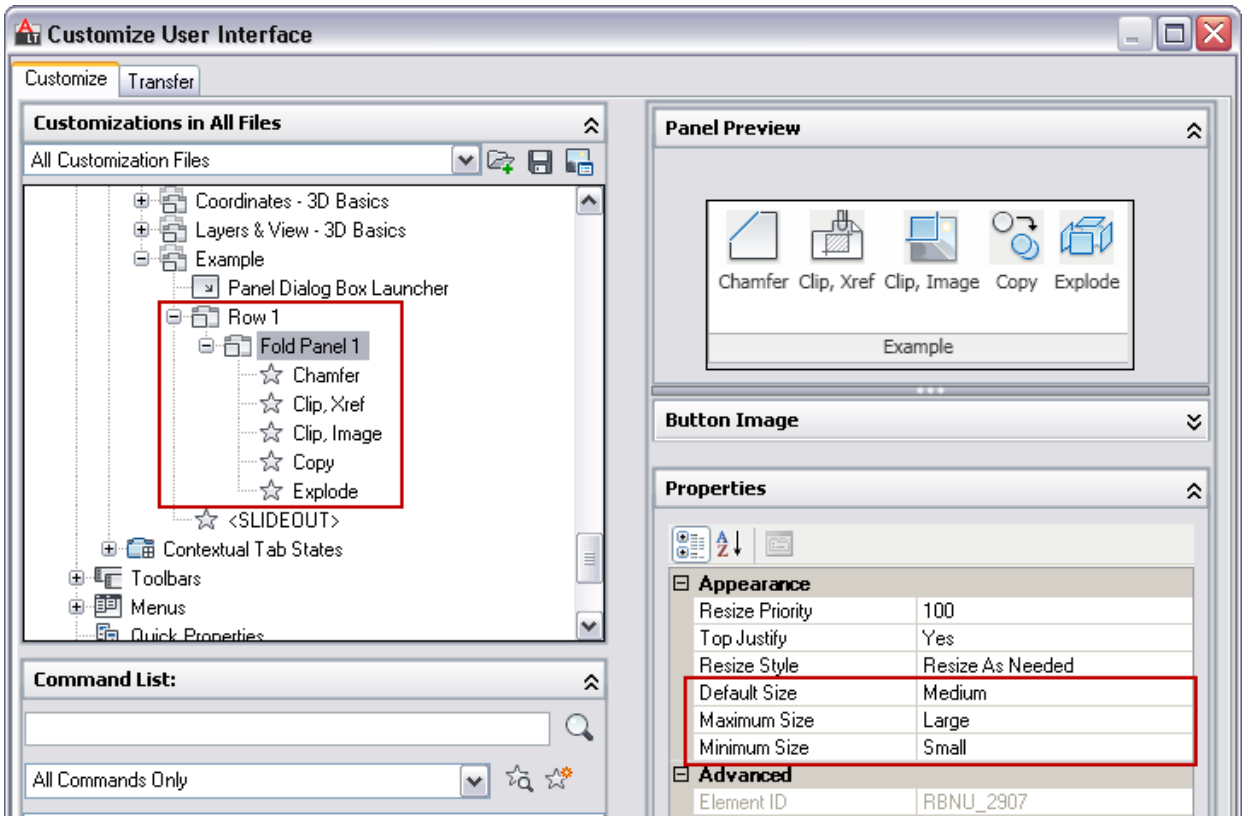

Figure 6. Ribbon Fold panel in the CUI Editor

For example, the Fold panel defined above could have the following appearances:

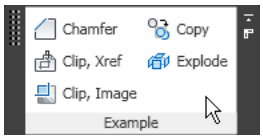

Figure 7. Ribbon Fold panel -- Default or Floating

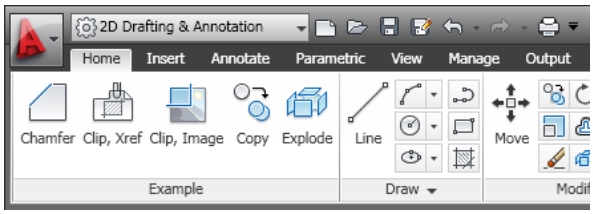

Figure 8. Ribbon Fold panel -- Maximum

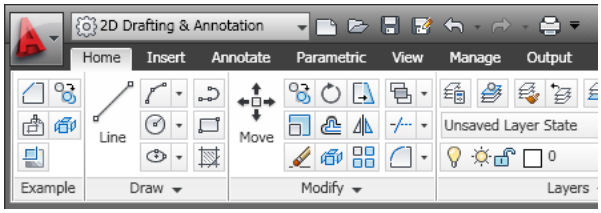

Figure 9. Ribbon Fold panel -- Minimum

Quick Access Toolbar

The Quick Access toolbar displays the name of the current workspace. You can easily select a different workspace and access other workspace tools. In addition, the default Quick Access toolbar now includes both the Save and the Save As tools.

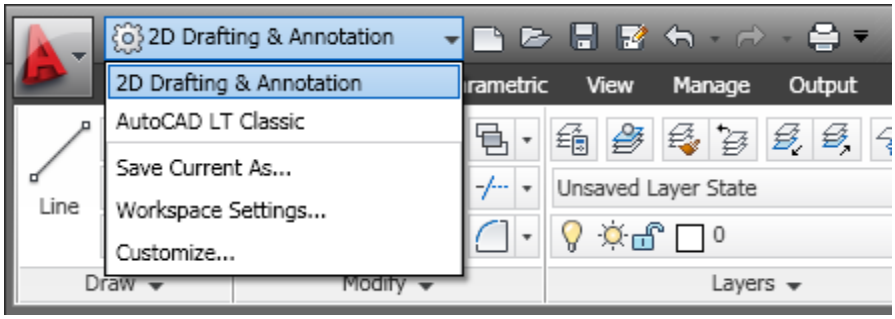

Figure 10. Quick Access toolbar with Workspace menu

Navigation

AutoCAD LT 2011 includes a new Navigation Bar with the frequently used navigation tools Autodesk® SteeringWheels®, Pan, and Zoom. It replaces the navigation tools that were previously accessible on the status bar. You can control the display of the Navigation Bar for individual workspaces via a property in the CUI dialog box.

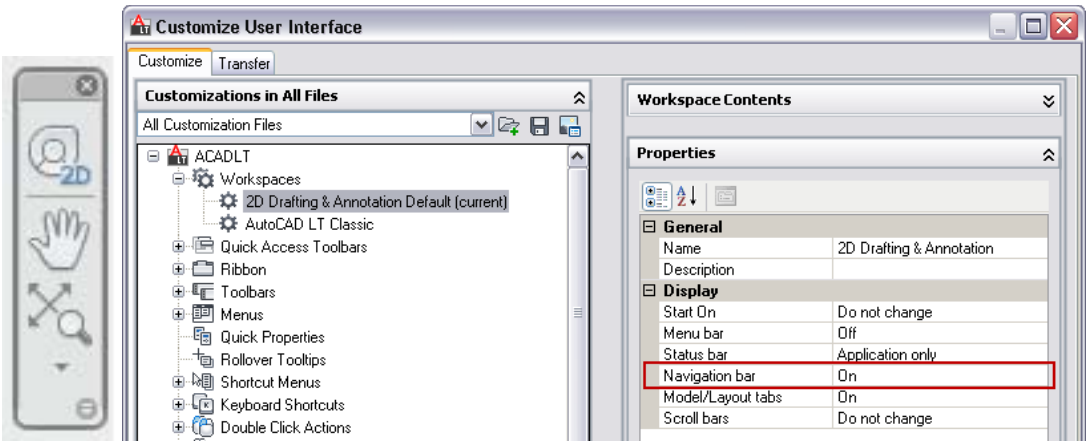

Figure 11. Navigation bar and CUI Editor

UCS Icon

The UCS icon has been updated. By default all the axes are white, but a checkbox in the UCS Icon Properties dialog enables you to display a different color for each axis: red for X, green for Y, and blue for Z.

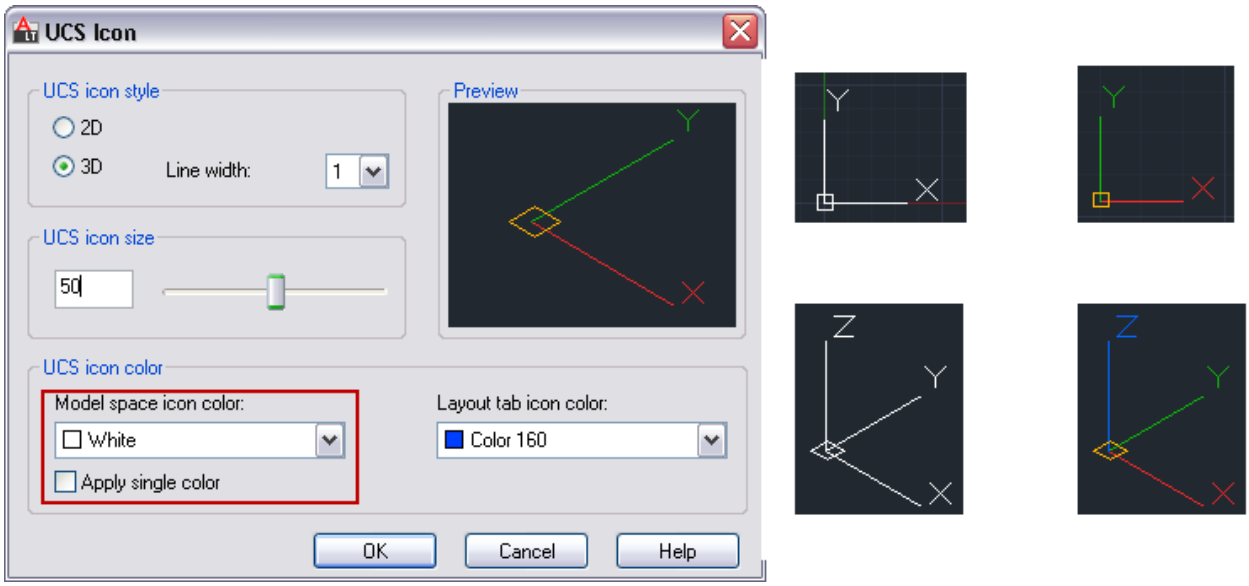

Figure 12. 2D and 3D UCS icons

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Object Visibility

AutoCAD LT 2011 includes new tools that enable you to control object visibility independent from layer visibility. The Object Visibility tools are accessible from the right-click menu when objects are selected as well as when no objects are selected. When you use the Isolate Objects tool, only the selected objects remain visible in the drawing. All other objects are hidden.

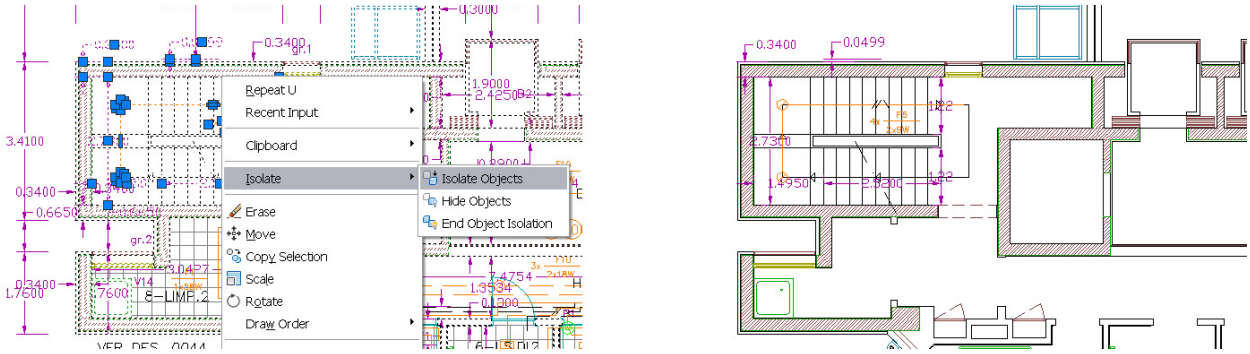

Figure 13. Isolated objects

Alternatively, when you use the Hide Objects tool, the selected objects are hidden.

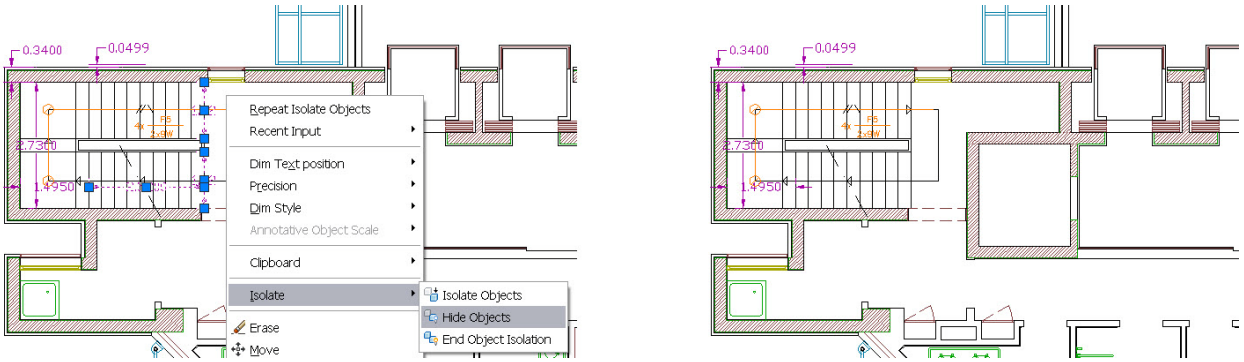

Figure 14. Hidden objects

You can use a combination of the Isolate Objects and Hide Objects tools to efficiently display only the objects that are relevant to your current task. For example, you might use the Isolate Objects tool to select an area of the drawing you want to edit and then use the Hide Objects tool to hide additional objects within that area. After completing your task, you can quickly restore the hidden objects using the End Object Isolation tool.

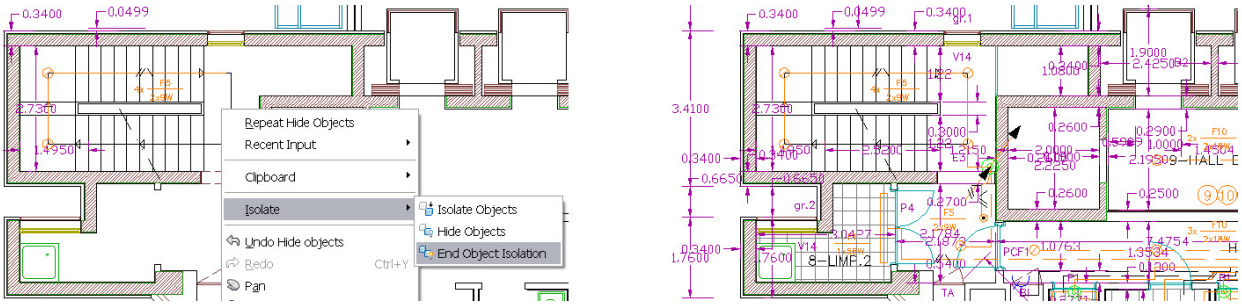

Figure 15. End object isolation

The OBJECTISOLATIONMODE system variable controls whether isolated/hidden objects persist between drawing sessions. A light-bulb icon on the status bar indicates whether object isolation is active in the drawing.

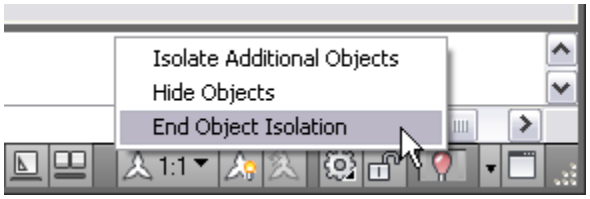

Figure 16. Object Isolation Status Icon

Object Selection

The new Select Similar tool enables you to select an object and automatically include all other objects of the same type and with the same properties, in a new selection set. You can access it from the right-click menu when objects are selected.

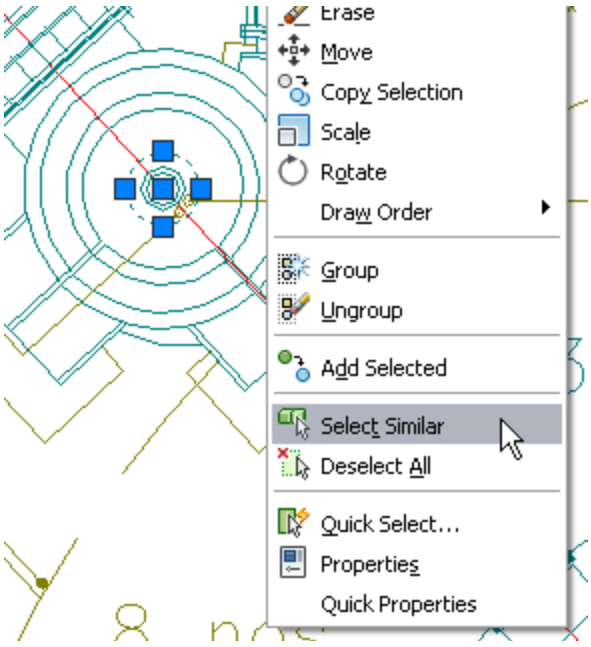

Figure 17. Select Similar tool

A Settings option (accessible when you enter SELECTSIMILAR at the command line) enables you to specify which properties to filter. If only the Layer property is enabled when you select a circle, for example, AutoCAD LT automatically selects all circles on the same layer as the one you selected. If both the Layer and Linetype properties are enabled, however, AutoCAD LT selects only the circles on the same layer *and* with the same linetype as the selected one.

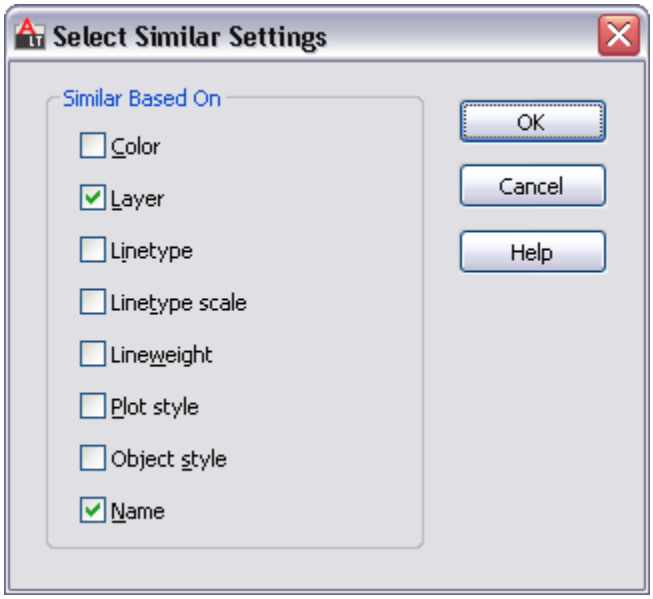

Figure 18. Select Similar settings

The Select Similar tool also enables you to select more than one object and create the matching selection set accordingly. For example, if the Layer filter is enabled and you select two circles, each on different layers, AutoCAD LT selects all the circles on both layers. If, instead, you select a circle and a line, AutoCAD LT selects all the circles on the same layer as the selected circle and all the lines on the same layer as the selected line. In addition to general object properties, you can filter selections based on object-specific properties including object style and reference name. Object Style properties apply to text and mtext, leaders and mleaders, dimensions and tolerances, and tables and multilines. Reference names apply to blocks and externally referenced files including xrefs and images as well as PDF, DWG, or DGN files.

In addition to the new Select Similar tool, a new option has been added to the PICKADD system variable. When PICKADD is set to a value of 2 (as it is now by default), objects that you select using the SELECT command remain selected in a “pick first” state even after you end the SELECT command.

Easily select overlapping objects using the new selection cycling functionality. You can enable selection cycling from a control on the status bar. When you try to select an object that overlaps other objects, AutoCAD LT displays a list of all the overlapping objects. As you pass the cursor over an object in the list, the relevant object in the drawing highlights.

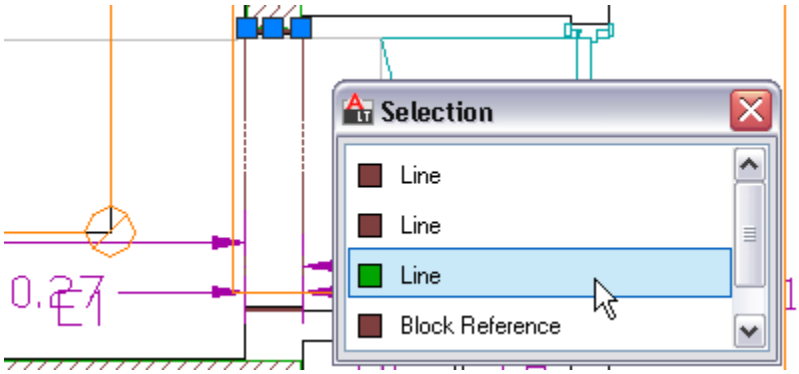

Figure 19. Selection Cycling

Object Creation

The new Add Selected tool enables you to quickly create a new object in your drawing based on the properties of an existing object. For example, if you use the Add Selected tool and select a polyline, AutoCAD LT automatically launches the PLINE command with basic object properties including color, layer, linetype, linetype scale, plotstyle, lineweight, transparency, and material preset to match the selected object.

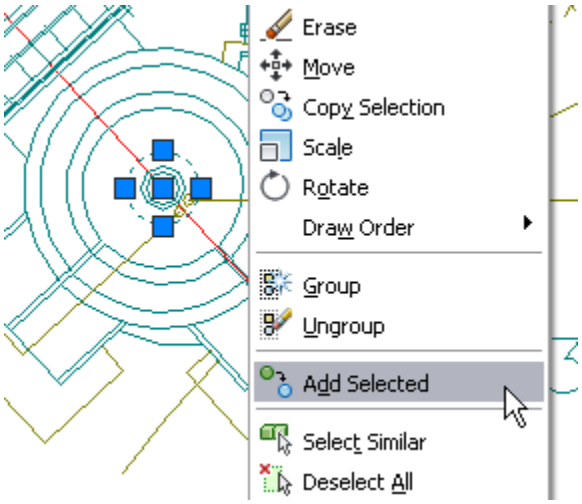

Figure 20. Add Selected tool

Document

Transparency

AutoCAD LT 2011 includes a new transparency property that enables you to apply transparency to objects and layers in the same way you apply colors, linetypes, and lineweights.

Figure 21. Transparent Objects

You can set transparency by layer, by block, or individually for an object. The default transparency value for layers and objects is 0, and you can set it as high as 90.

The Layer Properties Manager, the Layer States Manager, the Layer Filter dialog, and the Layer Translator have all been updated to reflect the new transparency property. In the Layer Properties Manager, a new column for Transparency is available in modelspace and layouts, and a column for Viewport (VP) Transparency is available in layouts and floating modelspace viewports.

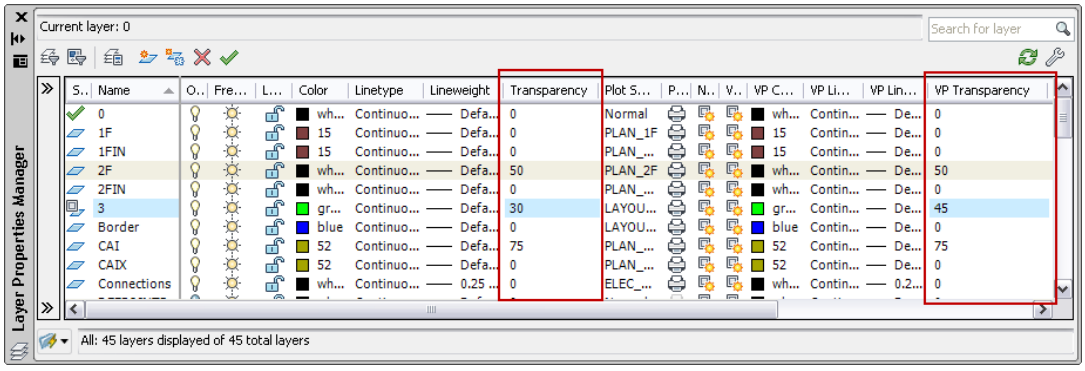
Current layer: 0
Search for layer
Layer Properties Manager
S.. Name O.. Fre... L... Color Linetype Lineweight Transparency Plot S... P... N.. V.. VP C... VP Li... VP Lin... VP Transparency
0 wh... Continuo... Defa... 0 Normal wh... Contin... De... 0
1F 15 Continuo... Defa... 0 PLAN_1F 15 Contin... De... 0
1FIN 15 Continuo... Defa... 0 PLAN_... 15 Contin... De... 0
2F wh... Continuo... Defa... 50 PLAN_2F wh... Contin... De... 50
2FIN wh... Continuo... Defa... 0 PLAN_... wh... Contin... De... 0
3 gr... Continuo... Defa... 30 LAYOU... gr... Contin... De... 45
Border blue Continuo... Defa... 0 LAYOU... blue Contin... De... 0
CAI 52 Continuo... Defa... 75 PLAN_... 52 Contin... De... 75
CAIX 52 Continuo... Defa... 0 PLAN_... 52 Contin... De... 0
Connections wh... Continuo... 0.25 ... 0 ELEC_... wh... Contin... 0.2... 0
All: 45 layers displayed of 45 total layers

Figure 22. Transparency in the Layer Properties Manager

You can set transparency for individual objects just like color and linetype. Setting a transparency value for an individual object overrides the layer transparency setting for that object. You can access object transparency from a number of places: the Properties palette, Quick Properties, or the ribbon. The new CETRANSPARENCY system variable sets the transparency property for new objects.

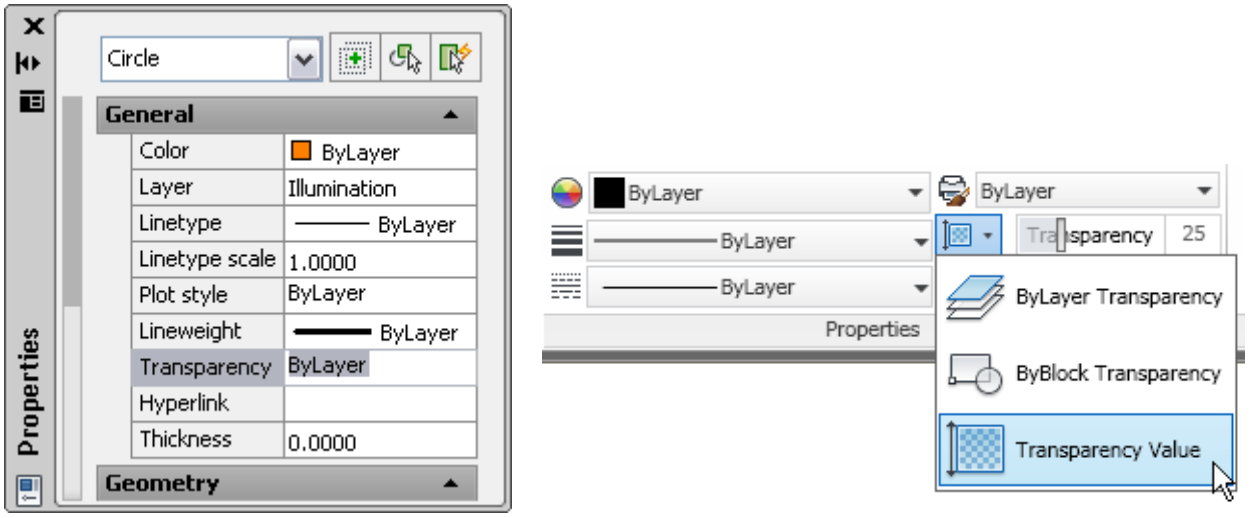

Figure 23. Transparency on the Properties palette and ribbon

Transparency has also been added to the Quick Select, Filter, SetByLayer Settings, and Match Property Settings dialogs as well as the CHPROP, CHANGE, -LAYER, VPLAYER, and LIST commands.

A button has been added to the status bar to enable you to temporarily turn off transparency display (TRANSPARENCYDISPLAY system variable), similar to the behavior of the lineweight display button. This does not affect plotting. However, you also have the option to turn off transparency when plotting. The Plot and Page Setup dialogs both include a checkbox for transparency (PLOTTRANSPARENCY), similar to the behavior for plot styles. Transparent plotting is turned off by default, because transparency is rasterized for plotting and can slow down plotting in certain situations.

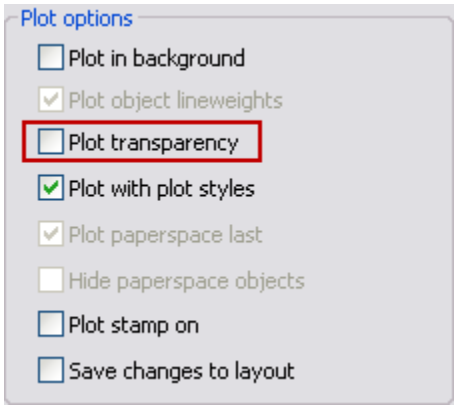

Figure 24. Plot transparency

Prior to AutoCAD LT 2011, images had a setting, also called “transparency,” that controlled whether the background of a bitonal image was clear or opaque. This property has been renamed to “background transparency” to distinguish it from the new “transparency” property. You can apply both background and object transparencies to images in AutoCAD LT 2011.

Hatches and Gradients

The Hatch command received several enhancements in AutoCAD LT 2011 for faster creation and editing of hatch objects. It now immediately prompts you to select an internal point without displaying the Hatch dialog box. Instead, the new Hatch Creation contextual ribbon tab provides easy access to all hatch and gradient options.

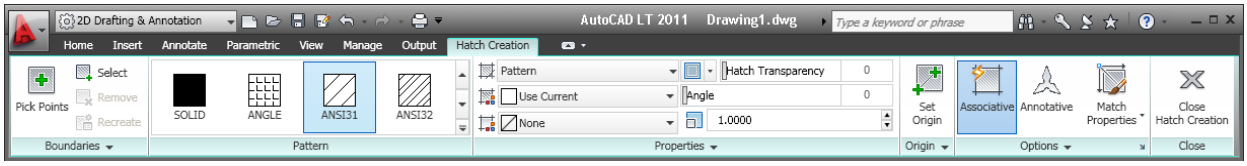

Figure 25. Hatch Creation ribbon tab

A Hatch Editor contextual ribbon displays similar hatch tools when you select an existing hatch.

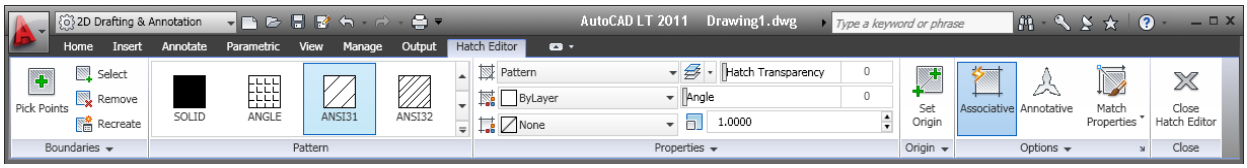

Figure 26. Hatch Editor ribbon tab

The Hatch Preview function for the “pick points” method has been improved. Now, passing your cursor over an eligible area shows you what the hatch would look like if you clicked there.

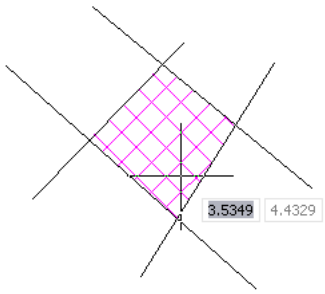

Figure 27. Hatch preview before clicking

You can also see the result of each click as you pick points or objects in the drawing. Keep in mind that even though it looks as though a hatch was created as you clicked, it will not actually be a separate object unless you have the “Create Separate Hatches” option on.

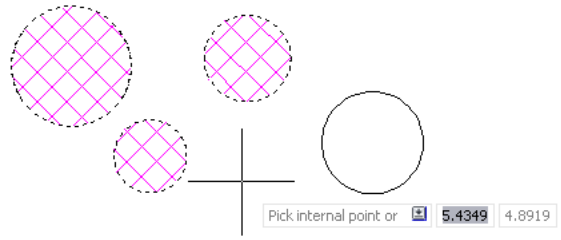

Figure 28. Hatch preview after clicking

AutoCAD LT 2011 continues to expand object grip functionality with a new center grip for direct manipulation of hatch objects. You can use direct manipulation to stretch or move the hatch or change the origin, angle, or scale. These options are available when you hover over the grip. You can either choose an option from the list, or activate the grip and use CTRL to cycle through the different behaviors.

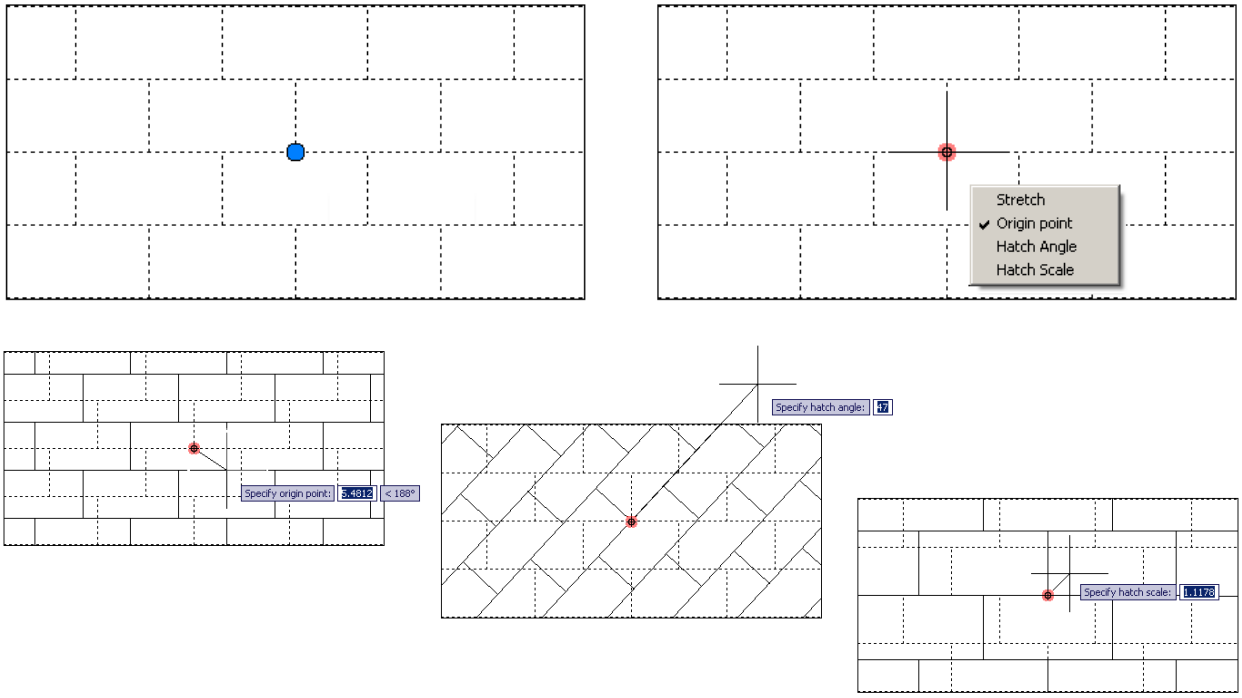

Figure 29. Hatch direct manipulation tools

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Other hatch grip behavior has not changed, except that “stretch” is now the default action for the secondary or middle grips on a non-associative hatch.

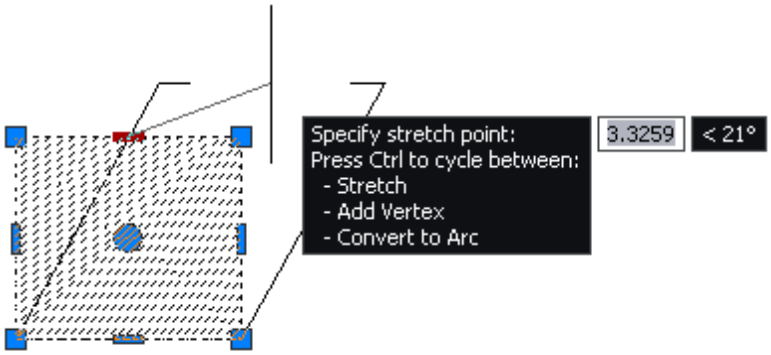

Figure 30. Stretch hatch boundary

Hatches now support a background color in addition to line color. This enables you to have the effect of layering hatches in one object.

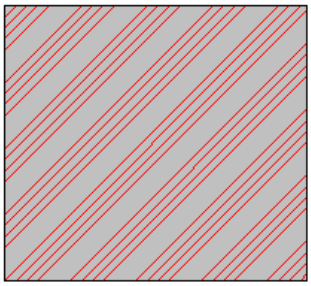

Figure 31. Hatch with background color

You now also have the option to set a hatch’s layer before you create it. You can choose either to use the current layer or to pick one from your drawing. Like color, pattern, and other hatch properties, layer is a persistent setting during your drawing session.

The command HATCHTOBACK has been introduced in response to an item on the AUGI wishlist. Similar to TEXTTOFRONT, HATCHTOBACK sends hatches underneath all other objects in the drawing. “Send Hatches to Back” is available on the Modify panel of the Home tab under the Draw Order flyout, along with “Bring Text to Front” and “Bring Dimensions to Front.”

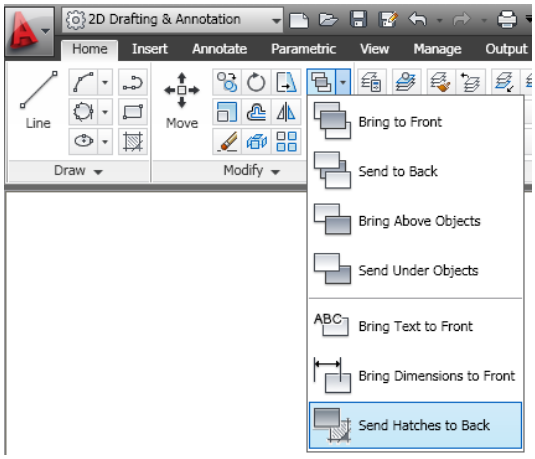

Figure 32. Send Hatches to Back tool

The new system variable MIRRHATCH enables you to mirror hatches while retaining their orientation. (This is similar to the MIRRTEXT variable.) Set to 0, mirroring hatches maintains their original angle. When MIRRHATCH is set to 1, the hatch angle mirrors along with the rest of the objects.

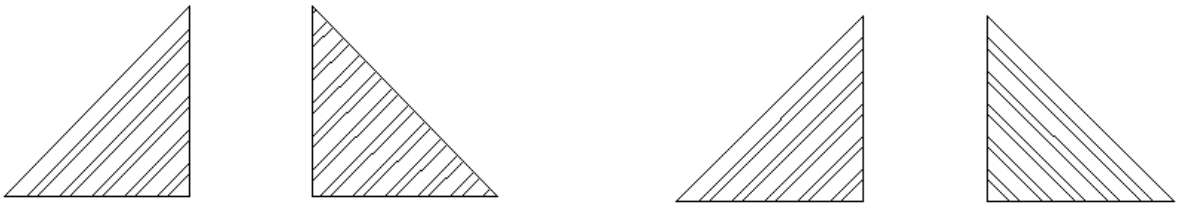

Figure 33. Hatch Mirror options

The Hatch Object Limit system variable (HPOBJWARNING) has been increased to 10,000 from 1,000 to reflect the capabilities of current computers. When a large number of objects are selected for hatch boundary calculations, it can result in slower performance. Thanks to increased hardware capabilities, though, it now takes a much larger number of boundary objects to affect calculation speed. You may now also set the value of the Hatch Object Limit yourself.

Polylines

Polyline objects in AutoCAD LT 2011 now have extra grips to make editing them easier than ever. In addition to the familiar primary grips located at the end of each polyline segment, there are now secondary grips located at the midpoint of each segment. These grips, like the new hatch grips, are multifunctional. The available functions can be seen by hovering over a grip, and you can choose an option directly from the menu that appears.

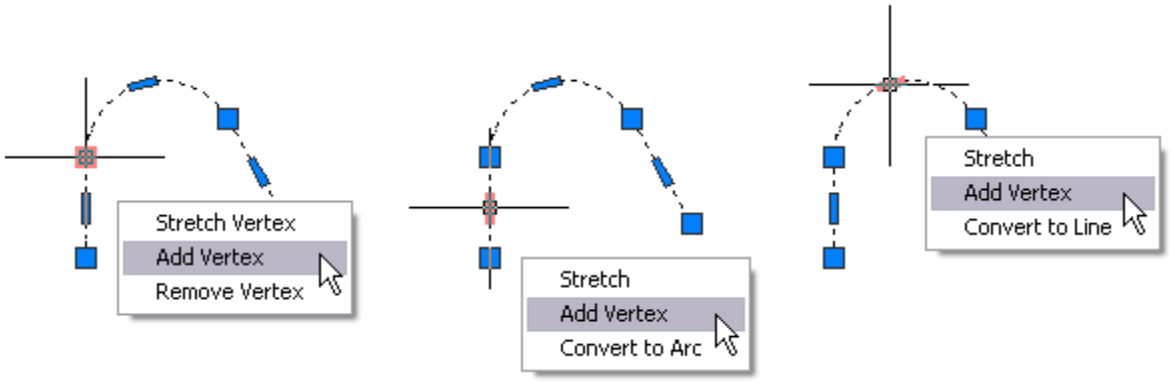

Figure 34. Polyline direct manipulation tools

You can also activate a grip by clicking on it. Then you can cycle through the available functions by pressing CTRL, or choosing one of the options from the right-click menu. Icons next to the cursor indicate the active function.

Sub-selection for polylines has been refined in AutoCAD LT 2011. To sub-select one or more segments of a polyline, hold down CTRL while left-clicking on the polyline.

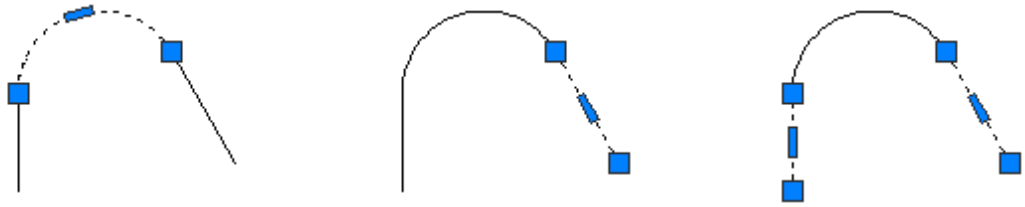

Figure 35. Sub-selection for polylines

Grip behavior for sub-selected segments is identical to the behavior when the entire polyline is selected.

You can now use the JOIN command to connect lines, arcs, and polylines to 3D polylines, as long as they are all contiguous (in other words, they share a common endpoint). You must select the most complex object first (in this case, the 3D polyline), and the objects to be joined do *not* need to be coplanar.

Splines

Splines have been updated in AutoCAD LT 2011 to provide more flexibility and control. You can define a spline using fit points or control vertices (CV). CV splines are more appropriate if you will be using them with 3D NURBS (non-uniform rational b-spline) surfaces.

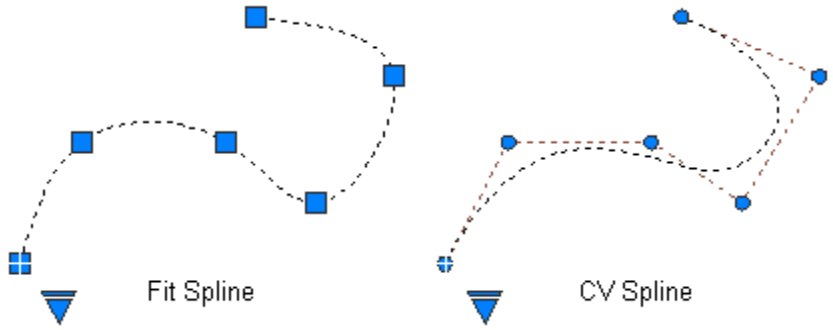

Figure 36. Fit spline and CV spline

When drawing a fit spline, you can specify additional settings for its start and end tangencies, tolerance (how close the spline must come to the fit point), and knot parameterization (controlling the shape of the curve as it passes through the fit point).

The only option for CV splines is Degree, which controls how many bends the spline can take in a given span.

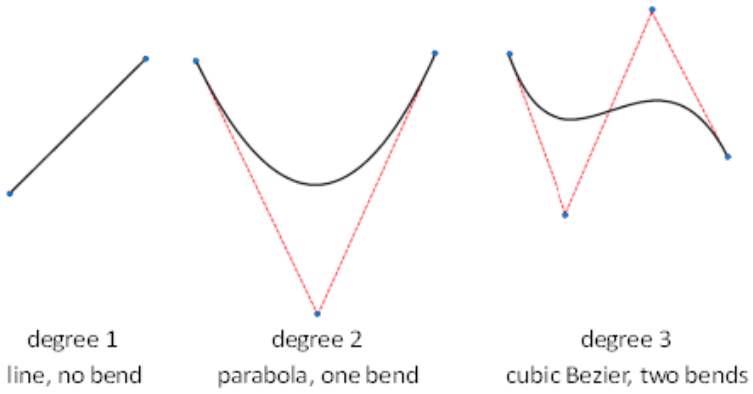

Figure 37. CV splines of varying degree

Easily switch methods, add and remove points, or edit endpoint tangencies using intuitive grip menus.

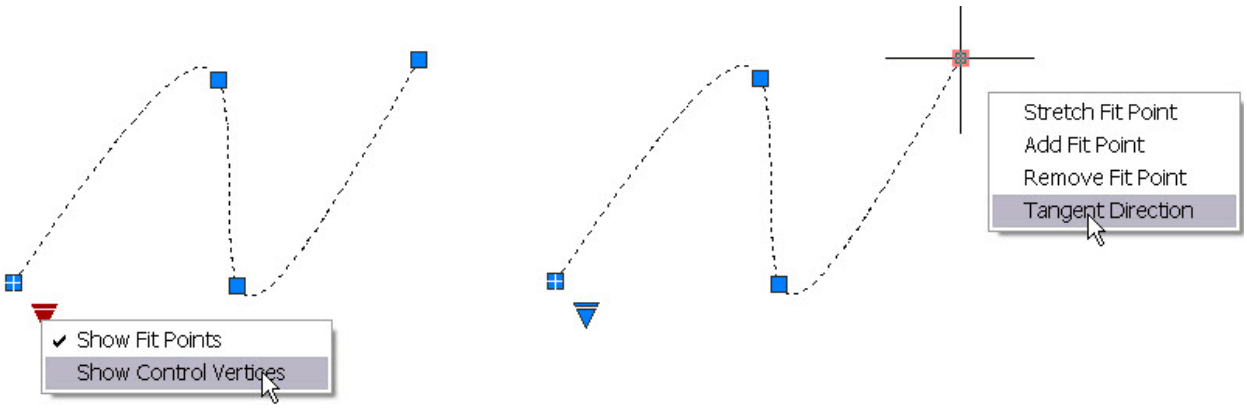

Figure 38. Spline grip menus

The SPLINEDIT command also has several new options, including improved Edit Vertex options. You can now easily add “kinks” or sharp corners to a spline.

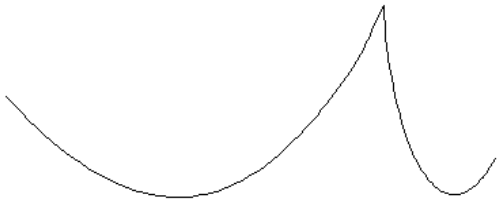

Figure 39. Spline with kink

You can now use the JOIN command to connect lines, arcs, polylines, 3D polylines, and helixes to splines, as long as they are all contiguous (in other words, they share a common endpoint). You must select the most complex object first (in this case, the spline), and the objects to be joined do *not* need to be coplanar.

External References

The selection of externally referenced files has been enhanced in AutoCAD LT 2011. When you select a reference object in the drawing (xrefs, images, DWF™, DGN, PDF, data extraction tables), the corresponding reference is selected in the External References palette. Similarly, if you select file references from the External References palette, the references are highlighted (but not selected) in the drawing, assuming they are visible in the current view. You can control this behavior with the new ERHIGHLIGHT system variable.

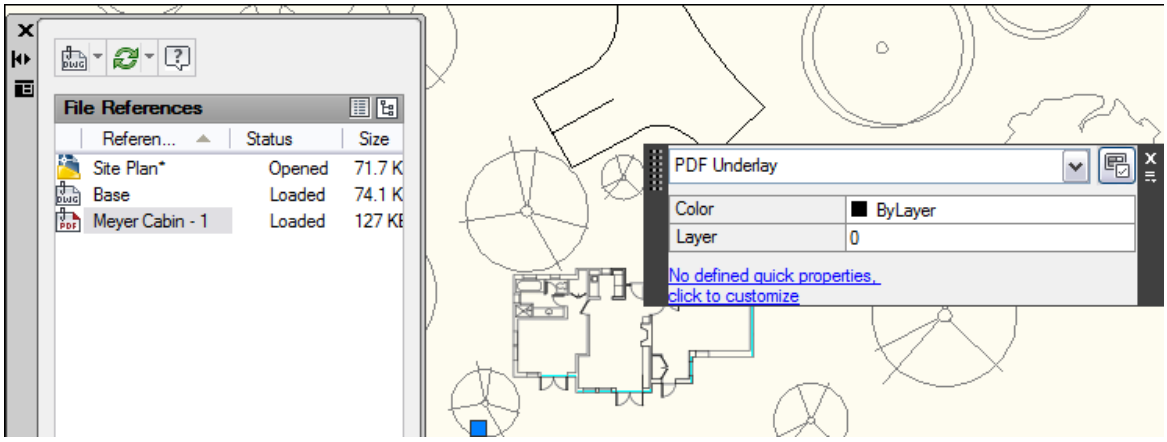

Figure 40. External Reference highlighting

Scale Lists

Scale list functionality has been enhanced in AutoCAD LT 2011 to store a customizable default list of annotation scales in the fixed profile of the registry. You can use the default scale list to define a customized list of scales that automatically displays in all your drawings. A scale list is still maintained in the drawing, but you can easily reset the scale list in the drawing to the default list of scales (metric or imperial) defined in the registry. When the scale list in a drawing is reset, AutoCAD LT purges the unused scales in the drawing and then merges in the customized list of scales from the registry into the drawing. You can customize the Default Scale List from the User Preferences Tab of the Options dialog box. You can still edit the scale list stored in the drawing by accessing the scale control on the Status bar or with the SCALELISTEDIT command.

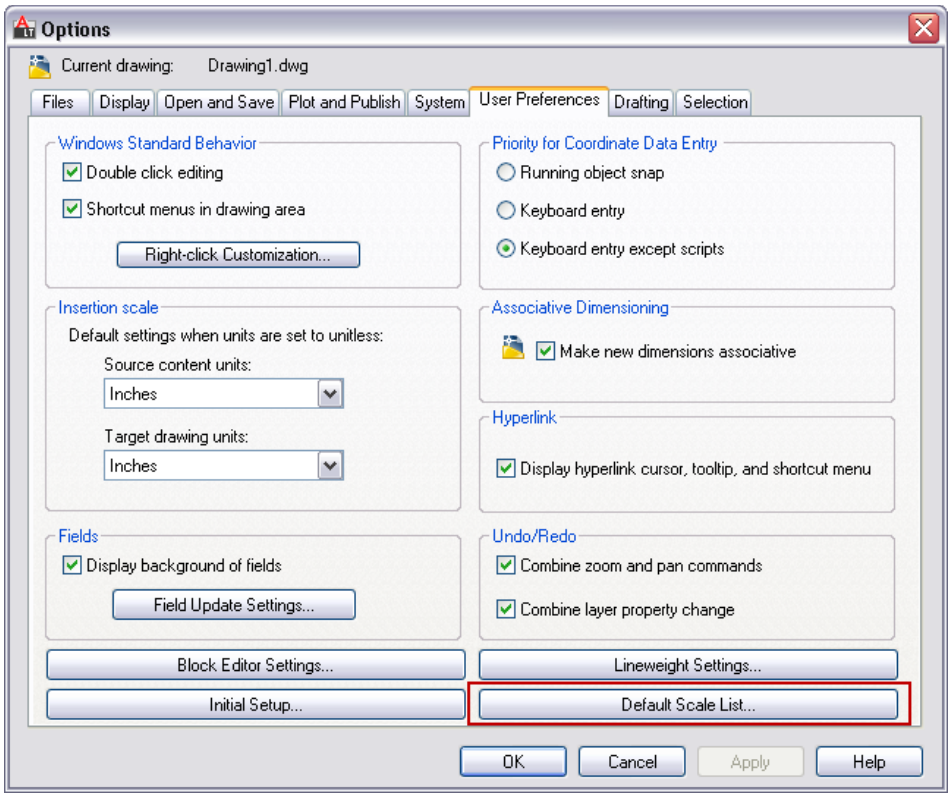

Figure 41. User Preference tab of the Options dialog

The Default Scale List dialog box is similar to the existing Edit Scale List dialog, which edits the scales in the drawing. However, the Default Scale List dialog box includes additional controls for you to specify if the default scales are metric or imperial.

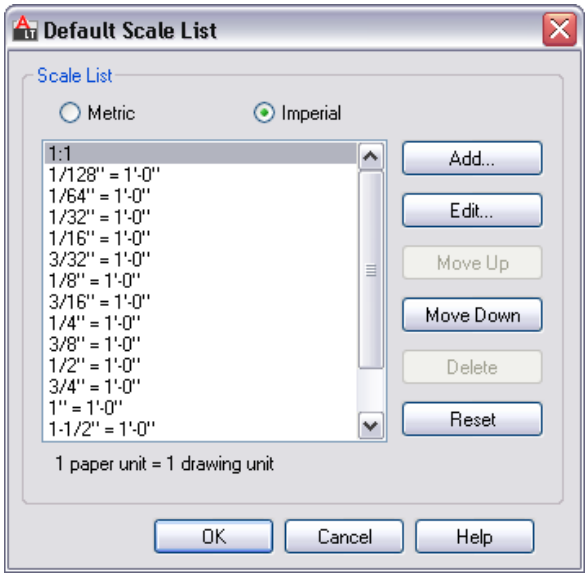

Figure 42. Default Scale List

When you reset the scales list in a drawing, you are prompted to select Metric scales, Imperial scales, or both. The default choice is governed by the MEASUREMENT variable in the drawing. When you create a new drawing without specifying a template, AutoCAD LT adds metric or imperial scales based on the MEASUREMENT variable. When you create a new drawing based on a template, the scales in the template appear in the new drawing. The scales in the registry are not imported.

Missing SHX and Font Files

You now have the option to ignore missing SHX files (shape or font files) when opening a drawing. You are no longer required to specify a replacement.

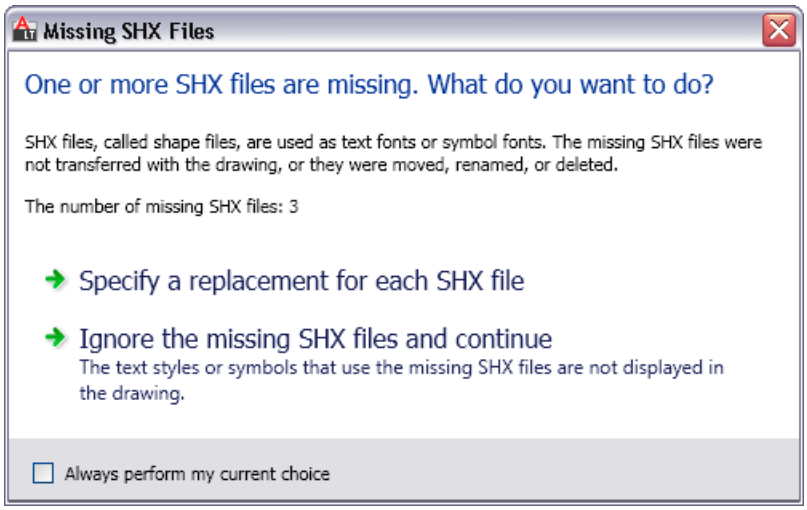
Missing SHX Files
One or more SHX files are missing. What do you want to do?
SHX files, called shape files, are used as text fonts or symbol fonts. The missing SHX files were not transferred with the drawing, or they were moved, renamed, or deleted.
The number of missing SHX files: 3
Specify a replacement for each SHX file
Ignore the missing SHX files and continue
The text styles or symbols that use the missing SHX files are not displayed in the drawing.
Always perform my current choice

Figure 43. Missing SHX files

This dialog may be suppressed if FONTALT is set to something other than “none.”

Text styles with missing fonts are now identified by an icon in the Text Style Manager.

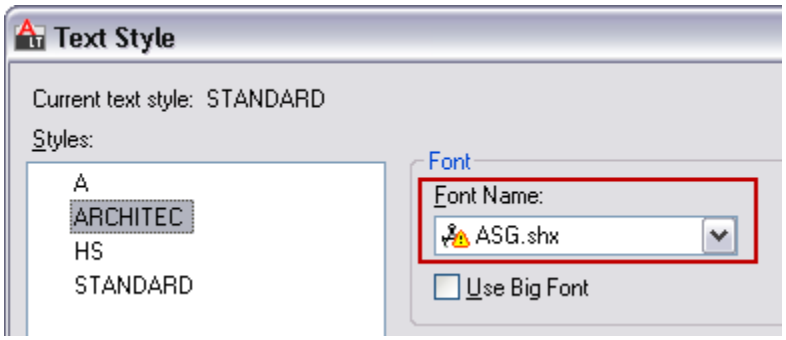

Figure 44. Missing font files

Text Alignment in Linetypes

AutoCAD LT 2011 now makes it possible to maintain linetype readability in any orientation.

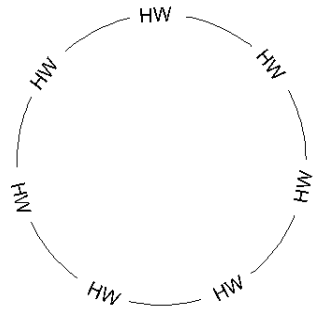

Figure 45. Alignment of text in a linetype

The linetypes included with AutoCAD LT 2011 behave this way by default. To update your own custom linetypes, you need to change the rotation option to U, for “upright”. (Other possible values for the rotation option are R, for “relative,” and A, for “absolute.”)

An example linetype definition looks like this:

Old:

```
*GAS_LINE,Gas line ----GAS----GAS----GAS----GAS----GAS----GAS--
A,.5,-.2,["GAS",STANDARD,S=.1,R=0.0,X=-0.1,Y=-.05],-.25
```

New:

```
*GAS_LINE,Gas line ----GAS----GAS----GAS----GAS----GAS----GAS--
A,.5,-.2,["GAS",STANDARD,S=.1,U=0.0,X=-0.1,Y=-.05],-.25
```

Parametric Constraints

AutoCAD LT 2011 can view, use, and delete constraints created by AutoCAD® software. However, it cannot create new constraints or modify existing ones. The available tools can be found on the Parametric tab on the ribbon.

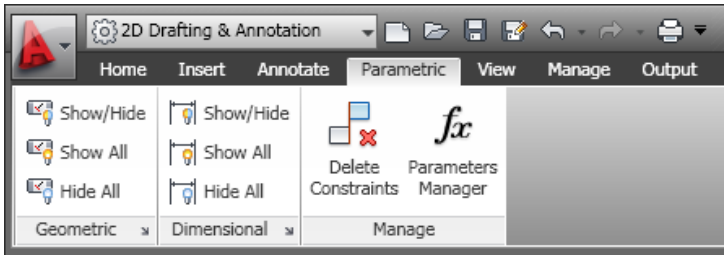

Figure 46. Parametric ribbon tab in AutoCAD LT 2011

For more on parametric constraints, refer to the AutoCAD 2011 Preview Guide.

New to AutoCAD LT 2011

There are a few features in AutoCAD LT 2011 that will be familiar to long-time AutoCAD users, but that have been unavailable in AutoCAD LT until now.

- Gradient hatches are now supported, and can be found in the pattern list on the Hatch Creation and Hatch Editor contextual ribbon tabs.
- Quick Dimension, available on the Dimensions panel of the Annotate tab, is a useful tool for creating a series of baseline or continued dimensions for selected objects.
- Layer Previous enables you to undo the most recent set of changes to layer properties.
- The Sketch command, available at the command line, can be used to create irregular boundaries or to trace with a digitizer. You can set the increment for recording points, choose the type of sketch to create (lines, polylines, or splines), and set the tolerance for spline-fit sketches.

Learning Resources

When you start AutoCAD LT 2011, a Welcome Screen is automatically displayed. From the Welcome Screen you can link to short videos to learn about key topics in AutoCAD LT. Additional links at the bottom of the Welcome Screen provide easy access to more learning resources, including What's New, Learning Path, and AutoCAD LT Online Help.

New Features Workshop

The New Features Workshop has been updated to include AutoCAD LT 2011 functionality. This interactivelearning tool helps you discover the newest functionality with minimal effort. You can access the New Features Workshop from the drop-down menu on the InfoCenter toolbar, to the right of the Help button.

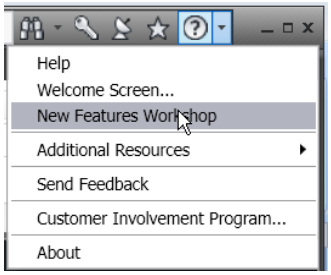

Figure 47. Infocenter learning tools

Online Help System

AutoCAD LT 2011 includes web-based help, which you can launch from the Help icon on the InfoCenter.

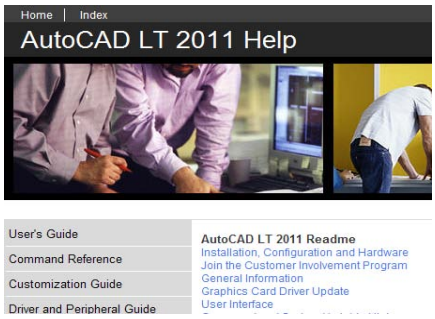

Figure 48. Online help system

A control on the System tab of the Options dialog box allows you to disable the online help. Doing so displays a local version of the AutoCAD Help system.

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